

Pengaruh pemberian kombinasi Larutan Tyrode, Serum dan Seng Sitrat terhadap kualitas Spermatozoa pada Semen Astenozoospermia manusia In Vitro

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Abstrak

ABSTRAK

Ruang lingkup dan cara penelitian : Kemampuan spermatozoa untuk mengadakan fertilisasi harus didukung oleh motilitas spermatozoa. Salah satu penyebab infertilitas adalah gangguan motilitas pada spermatozoa. Pada astenozoospermia motilitas spermatozoa menurun. Seng termasuk elemen renik (trace element). Seng sitrat dapat meningkatkan motilitas spermatozoa manusia di dalam semen in vitro. Larutan Tyrode sebagai pengencer dan serum anak sapi (calf) dapat mempertahankan motilitas dan daya hidup spermatozoa. Penelitian ini dilakukan untuk mengetahui pengaruh kombinasi larutan Tyrode, serum dan seng sitrat terhadap kualitas spermatozoa semen astenozoospermia manusia in vitro. Kualitas spermatozoa meliputi persentase spermatozoa motil dengan gerak maju dari penetrasi spermatozoa yang menembus (in vitro) getah serviks sapi masa estrus. Terlebih dahulu ditentukan waktu inkubasi yang optimum untuk meningkatkan persentase spermatozoa motil dengan gerak maju dari 5 sampel semen. Dengan waktu inkubasi optimum yang diperoleh penelitian dilanjutkan terhadap 30 sampel semen astenozoospermia pasangan ingin anak (PIA) dengan kriteria : volume > 2.5 mL; jumlah spermatozoa di dalam semen > 10 juta per mL; persentase spermatozoa motil < 50%. Masing-masing sampel semen dibagi 4, untuk kontrol (K), kontrol dengan perlakuan (Kdp), perlakuan (PI dan P2).

Hasil dan Kesimpulan : Penelitian pendahuluan menunjukkan waktu inkubasi 0,5 jam berpengaruh paling baik terhadap persentase spermatozoa motil dengan gerak maju di dalam semen. Hasil penelitian lanjutan, dengan analisis varian 2 arch, menunjukkan perbedaan bermakna ($P < 0,01$) antara persentase spermatozoa motil dengan gerak maju pada kelompok 0 dan 0,5 jam, juga antara kelompok K, Kdp, P1 dan P2. Uji BNT menunjukkan bahwa kelompok P2 setelah inkubasi 0,5 jam 37°C mempunyai persentase spermatozoa motil dengan gerak maju tertinggi. Kelompok P2 juga memperlihatkan penetrasi spermatozoa ke dalam getah serviks bertambah secara bermakna ($P < 0,01$)

Kesimpulan : Pengaruh pemberian kombinasi larutan Tyrode, serum dan seng sitrat masing-masing larutan Tyrode sebanyak 50%, serum sebanyak 5% dan seng sitrat dosis 183 mikrogram/mL pada semen astenozoospermia in vitro dapat meningkatkan persentase spermatozoa motil dan penetrasi spermatozoa ke dalam getah serviks bertambah.

<i>ABSTRACT</i>

Scope and Methods of study : The motility of spermatozoa is very important for fertilization. The disturbance of the sperm motile is one of the caused of male infertility. In the asthenozoospermia the motility of spermatozoa is descending. Zinc belong to trace element. Zinc citrate can increase motile spermatozoa in human semen in vitro. Solution of Tyrode as dilute and calf serum can stand in life and motile sperm. This study is intended to investigate the effects of combination of solution of Tyrode, serum

and zinc citrate on the quality of human spermatozoa in vitro. The quality of spermatozoa consist the percentage of progressive motility and spermatozoa penetrating cervical mucus. The bovine cervical mucus in the estrous period was used instead of midcycle human cervical mucus. The optimal incubation period that can increase the percentage of progressive motility of spermatozoa was first determined on 5 semen samples. This incubation period was then used in further investigation on 30 sperm samples of asthenozoospermia from infertile men, which fulfill the criteria : volume of semen > 2,5 mL; percentage of progressive motility of spermatozoa < 50%; sperm count > 10 million per mL semen. Each semen samples was divided into 4 groups ; untreated control, treated control, treatment I and treatment 2.

Finding and conclusions : The preliminary study showed that incubation period of 0,5 hour was optimal to increase the percentage of progressive motility of spermatozoa. The follow up investigation by two way nova, showed a significant difference in the percentage of progressive motility of spermatozoa between the 0,5 hour and 0 hour incubation, and also between the four groups. BNT test showed the treatment 2 group after 0,5 hour incubation at 37°C the percentage of progressive motility of spermatozoa was increased significantly ($P < 0,01$). Friedman's test on penetrating of spermatozoa cervical mucus showed that the treatment 2 group was increased 4 cm significantly ($P < 0,01$).

Conclusions : The effects of combination of solution of Tyrode, serum and zinc citrate instead of solution of Tyrode 50%, serum 5% and zinc citrate 183 ug/mL on human asthenozoospermia semen in vitro, the percentage of progressive motility of spermatozoa was increased and spermatozoa penetrating cervical mucus was increased.